AQ

(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 385 478 A3**

# (12) EUROPEAN PATENT APPLICATION

(21) Application number: 90104029.5

(51) Int. Cl.5: G06K 7/10

(22) Date of filing: 01.03.90

(30) Priority: 01.03.89 US 317533

(43) Date of publication of application:
05.09.90 Bulletin 90/36

(84) Designated Contracting States:
DE FR GB IT

(88) Date of deferred publication of the search report:
30.01.91 Bulletin 91/05

(71) Applicant: SYMBOL TECHNOLOGIES, INC.
116 Wilbur Place
Bohemia New York 11716-3300(US)

(72) Inventor: Metlitsky, Boris
18 Millstream Lane
Stony Brook, NY 11790(US)
Inventor: Krichever, Mark J.
26 Caridon Lane
Hauppauge, NY 11788(US)

(74) Representative: Wagner, Karl H. et al
WAGNER & GEYER European Patent
Attorneys Gewürzmühlstrasse 5e 5
D-8000 München 22(DE)

## (54) Bar code reader.

(57) In a bar code reader, a field of view which includes a symbol to be read is imaged upon a light-responsive array such as a CCD imager device (12). The output of this array is transferred to a memory (20) array to provide a bit-mapped type of binary representation of the image including the symbol. The memory is scanned (instead of the field of view itself being mechanically scanned) to recognize and decode the symbol. Because the angular orientation of the symbol is variable, this binary representation may be interpreted to determine how the memory array is to be scanned to recognize the bar code symbol. For example, the distinctive patterns of characters used in bar codes may be found by scanning the memory and the relative positions of these patterns interpreted to determine the position, size and shape of the symbol in the memory (20), thereby defining at what angular displacement the memory array need be addressed to traverse the rows of the bar code symbol. Or, the memory array may be simply scanned using preselected scan lines (beginning with a raster-type scan) until code recognition is obtained.

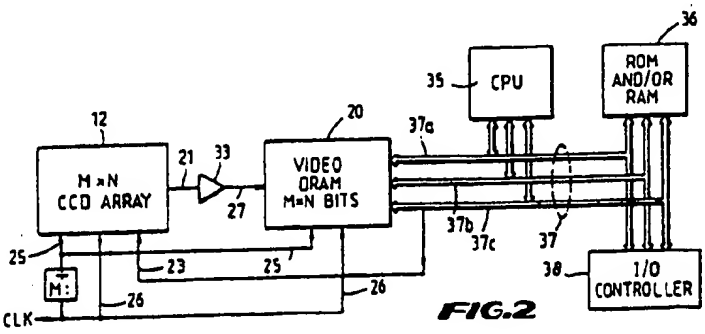


FIG.2

EP 0 385 478 A3

European Patent Office

# EUROPEAN SEARCH REPORT

Application Number

EP 90 10 4029

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int. Cl.5) |
|---|---|---|---|
| X,Y | EP-A-0 085 495 (NIPPONDENSO CO)<br>* abstract; claims 1-4; figure 1 * * pages 1 - 6, line 5 @ page 26, line 20 - page 28, line 7 * | 1-2,3-10 | G 06 K 7:10 |
| Y,P,A | WO-A-8 906 017 (DREXLER TECHNOLOGY CORPORATION)<br>* abstract; claims 1-5, 8-13 * * pages 1 - 4, line 27 * | 3-10,1-2 | |

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

G 06 F

The present search report has been drawn up for all claims

| Place of search | Date of completion of search | Examiner |
|---|---|---|
| The Hague | 03 December 90 | BEAUCE G.Y.G. |

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone
Y: particularly relevant if combined with another document of the same catagory
A: technological background
O: non-written disclosure
P: intermediate document
T: theory or principle underlying the invention

E: earlier patent document, but published on, or after the filing date
D: document cited in the application
L: document cited for other reasons

&: member of the same patent family, corresponding document

BEST AVAILABLE COPY